

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing—Federal Housing Commissioner		<b>STRUCTURAL ENGINEERING BULLETIN NO.</b> 904 Rev. 5 (Supersedes issue dated January 10, 1994)
<b>TO:</b> DIRECTOR, HOUSING DIVISION DIRECTOR, MULTIFAMILY DIVISION DIRECTOR, SINGLE FAMILY DIVISION		<b>ISSUE DATE:</b> January 21, 1998
		<b>REVIEW DATE:</b> January 21, 2001
<b>SUBJECT:</b> 1. Item Description      Shop Fabricated Wood-Frame Modular Dwelling Units		
2. Name and address of Manufacturer      Stratford Homes Limited Partnership P.O. Box 37 Stratford, WI 54484		

**This Structural Engineering Bulletin (SEB) should be filed with other SEBs and related Bulletins on materials or products as required by prescribed procedures.**

The technical description, requirements and limitations expressed herein do not constitute an endorsement or approval by the Department of Housing and Urban Development (HUD) of the subject matter, and any statement or representation, however made, indicating approval or endorsement by HUD is unauthorized and false, and will be considered a violation of the United States Criminal Code, 18 U.S.C. 709.

**NOTICE:** THIS BULLETIN APPLIES TO DWELLING UNITS BUILT UNDER HUD HOUSING PROGRAMS. NON-HUD INSURED UNITS MAY OR MAY NOT BE IN CONFORMITY WITH THE REQUIREMENTS OF THE HUD MINIMUM PROPERTY STANDARDS.

Any reproduction of this Bulletin must be in its entirety and any use of all or any part of this Bulletin in sales promotion or advertising is prohibited.

# **1. General:**

This Bulletin sets forth specific requirements under the Technical Suitability of Products Program for determining the eligibility of housing to be constructed under HUD mortgage insurance, or other HUD housing programs.

# **2. Scope:**

This Bulletin applies only to the structural features of this method of construction. Final determination of eligibility is made by the appropriate HUD Field Office. Other factors considered by the Field Office will be valuation, location, architectural planning and appeal, mechanical equipment, thermal characteristics, and market acceptance. Consideration is also necessary to determine whether a specific property will qualify under the specific HUD program, when constructed according to the method outlined in this Bulletin, and where the structure is to be located.

In geographical areas subject to hurricanes, earthquakes, or other severe conditions affecting dwelling structures, the HUD Field Office shall require additional safeguards in proposed designs, when necessary.

3. Minimum Property Standards (MPS):

Compliance with HUD MPS will be determined by the HUD Field Office on the same basis as submissions involving conventional construction, except for the special features described in this Bulletin.

4. Inspection:

Field compliance inspections covering conventional items of construction, and any special features covered in this Bulletin shall be made in accordance with prescribed procedures.

The appropriate HUD Field Office shall furnish a copy of a HUD field inspection report to Headquarters, Manufactured Housing and Standards Division, Office of Consumer and Regulatory Affairs, when there is:

- a. Evidence of noncompliance with any portion of the system of construction described in this Bulletin.
- b. Faulty shop fabrication, including significant surface defects.
- c. Damage to shop fabricated items or materials due to improper transportation, storage, handling, or assembly.
- d. Unsatisfactory field workmanship or performance of the product or system.
- e. Any significant degradation or deterioration of the product or evidence of lack of durability or performance.

Periodic plant inspections will be made by HUD Field Office, or State Agency personnel in accordance with prescribed procedures. Factory inspection reports shall be submitted to HUD Headquarters, upon request.

5. Certification:

The company named in this Bulletin shall furnish the builder with written certification stating that the product has been manufactured in compliance with the HUD Minimum Property Standards (MPS), except as modified by this Bulletin. The builder shall endorse the certification with a statement that the product has been erected in compliance with HUD MPS, except as modified by this Bulletin, and that the manufacturer's certification does not relieve the builder, in any way, of responsibility under the terms of the Builder's Warranty required by the National Housing Act, or under any provisions applicable to any other housing program. This certification shall be furnished to the HUD Field Office, upon completion of the property.

OUTLINE DESCRIPTION, CATEGORY I CONSTRUCTION:

GENERAL:

Completely shop fabricated wood frame modular dwelling units, 12 to 16 feet wide and up to 60 feet in length, are furnished in this method of construction. Units are factory finished on both the interior and the exterior. Units are transported to the building site, where they are set on conventional foundations and joined together.

Construction is basically of conventional wood framing which may include various types of interior and exterior finish materials. All materials and methods of installation shall be in accordance with HUD Minimum Property Standards, Use of Materials Bulletins (UM) and Materials Releases (MR), except as may be specifically noted herein. Plumbing, heating and electrical systems are shop installed and field connected.

This Bulletin is based on a structural review of the Leader, Nantucket and Concord models of Stratford Homes Limited Partnership (The Manufacturer), but may be considered applicable to all structurally similar units of this company. Foundation design and nonstructural items (such as architectural, plumbing, heating and electrical features) are not covered by this Bulletin.

SPECIFICATIONS:

Form HUD-92005, "Description of Materials" specifying only the structurally related items (Nos. 1 to 12, 14, 26 and 27), as originally submitted for determination of technical suitability, describes the materials that shall be used in construction of housing units under this system of construction. Form HUD-92005, furnished with each application for use under HUD housing programs, shall include as a minimum the same structural materials.

DRAWINGS:

The following drawings by Stratford Homes Limited Partnership shall be considered an integral part of this Bulletin:

<u>Drawing No.</u>	<u>Date</u>	<u>Description</u>
F1	5/4/86	24 x 46' Alliance Ranch
F2	10/18/85	24 x 42' Alliance #2 Ranch
F3	10/18/85	24 x 42' Alliance #3 Ranch
F4	8/10/87	24 x 38' Boston Ranch
F5	2/19/87	27.5 x 46' Bridgeport Ranch
F6	12/23/87	24 x 42' Dayton Ranch
F7	12/1/87	27.5 x 48' Kingston II Ranch
F8	8/19/87	27.5 x 48' Lafayette Ranch
F9	12/1/86	24 x 40 Nantucket Ranch
F10	6/15/87	24 x 36' Paxton Ranch
F11	10/22/87	24 x 44' Plymouth Ranch
F12	12/22/87	24 x 32' Winchester Ranch
F13	11/23/87	27.5 x 50' Yorktown Ranch
F14	5/20/87	36 x 40' Berkshire Ranch
F15	10/16/86	36 x 42' Brittany Ranch
F16	11/30/87	41 - 2 x 48' Chesapeake I Ranch
F17	10/18/87	24 x 46' Alliance (Non-Basement) Ranch
F18	12/6/86	24 x 40 Brookville (Non- Basement) Ranch

Floor Plans Bi-levels:

F21	1/21/88	24 x 44/46' Alliance IV Bi-level
-----	---------	----------------------------------

Floor Plans Tri-levels:

F31	12/5/86	24 x 36' Cherry Hill Tri-level
F32	6/3/87	32 x 24 x 47' - 11 Hawthorn Tri-level
F33	5/10/87	54 x 38' Saratoga Tri-level
F34	3/12/87	24 x 38' Woodridge Tri-level

Floor Plans 2 Story:

F41-A	8/17/87	27.5 x 48' Delaware- (1st Floor)
F41-B	8/17/87	27.5 x 48' Delaware- (2nd Floor)
F42-A	2/24/87	24 x 42' Westport (1st Floor)
F42-B	2/24/87	24 x 42' Westport (2nd Floor)

Typical Elevations:

EL-1	10/2/85	Alliance #1 Ranch
EL-2	2/21/87	Berkshire Ranch
EL-3	10/16/87	Bedford Bi-level
EL-4	4/24/87	Hawthorn Tri-level
EL-5	2/25/87	Westport 2 Story

Structural Drawings:

S1	8/10/87	Typical Ranch Foundation
S2	6/3/87	Typical Tri-level Foundation
S3	5/20/87	Foundation Insulation Methods
S-10	12/8/87	Typical Floor Framing Plan
S-15	12/1/87	Typical Electrical Plan
S-20	7/31/85	Typical Heating Plan
S-25	1/12/88	Typical Cabinet Elevations
S-30	5/27/87	Typical 24' Wide Ranch Section
S-31	8/13/87	Typical Non-Basement Section
S-32	1/20/88	Typical 6/12 Pitch Roof Ranch Section
S-33	1/27/88	Typical 25'-8" Wide Ranch Section
S-34	4/27/87	Typical 27.5' Wide Ranch Section
S-35	1/7/88	Typical 27.5' Wide 1 1/2 Story Section
S-36	10/10/87	Typical 24' Wide 2 Story Section
S-37	1/27/88	Typical 24' Wide Bi-level Section
S-38	5/20/87	Typical Bi-level w/Cathedral Ceiling Section
S-39	12/12/86	Typical Cherry-Hill Tri-level Section
S-40	1/12/86	Typical Tri-level Section
S-50	6/10/87	Typical Hip Roof Details
S-60	5/13/87	Dormer & Flashing Details

The Builder shall submit construction drawings to the HUD Field Office with each application under HUD housing programs, which shall include the same or similar structural features as shown on the drawings listed above. Copies of these listed drawings shall also be furnished to the HUD Field Office by the Builder, upon request.

DESIGN AND CONSTRUCTION REQUIREMENTS:

Design Loads: The method described in this Bulletin is based on maximum design loads of 40 psf for snow, Seismic Zone 1 and a Basic Wind Speed of 80 mph and Exposure C (American Society of Civil Engineers Standard 7-88). The Builder shall submit structural calculations to the local HUD Office, if housing units are to be located in geographical areas where these conditions are exceeded.

Framing of Loadbearing Walls: Wood-to-wood connections shall be provided between bearing walls and roof/ceiling or floor construction. Floor covering, including carpeting and vinyl tile, shall not be continued under loadbearing walls.

Roof Construction: Trussed rafters shall be designed and constructed in accordance with ANSI/TPI 1-1995 Standard (American National Standards Institute and Truss Plate Institute), "National Design Standard for Metal Plate Connected Wood Truss Construction."

MANUFACTURING PLANT:

Housing units covered under this Bulletin will be produced in the following plant:

Stratford Homes Limited Partnership  
P.O. Box 37  
402 S. Weber  
Stratford, WI 54484

The State of Wisconsin will inspect this plant in accordance with prescribed procedures.

QUALITY CONTROL:

The appropriate HUD Field Office or the State Agency (in Category III states) in whose jurisdiction the manufacturing plant is located, shall review and approve plant fabrication procedures and quality control program, to ensure compliance with approved plans and specifications. The quality control program shall include field erection and supervision by Stratford Homes Limited Partnership.

RECORD OF PROPERTIES:

The manufacturer shall provide a list of the first ten properties in which the component or system described in this Bulletin is used. The list shall include the complete address, or description of location, and approximate date of installation or erection. Failure of the manufacturer to provide HUD with above information, may result in cancellation of this Bulletin.

NOTICE OF CHANGES:

The manufacturer shall inform HUD in advance of changes in production facilities, transportation, field erection procedures, design, or materials used in this product. Further, the manufacturer must inform HUD of any revision to corporate structure, change of address or change in name or affiliation of the prime manufacturer. Failure of the manufacturer to notify HUD of any of the above changes, may result in cancellation of this Bulletin.

EVALUATION:

This SEB shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this SEB shall apply for a renewal or revision 90 days prior to the Review Date printed on this SEB. Submittals for renewal or revision shall be sent to HUD Headquarters. Appropriate User Fee shall be sent to:

U.S. Department of Housing and Urban Development  
Technical Suitability of Products Fees  
P.O. Box 954199  
St. Louis, MO 63195-4199

The holder of this SEB may apply for revision at any time prior to the Review Date. Minor revisions may be in the form of a supplement.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program," and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the SEB. HUD will notify the manufacturer that the SEB may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,
2. the manufacturer has changed its organizational form without notifying HUD, or
3. the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice, of the specific reasons for cancellation, and the opportunity to present views on why the SEB should not be canceled. No refund of fees will be made on a canceled document.

\*\*\*\*\*  
This Structural Engineering Bulletin is issued solely for the captioned firm and is not transferable to any person or successor entity.  
\*\*\*\*\*